NEW YORK STATE MECHANIC.

Under the Direction of the New York State Mechanic Association.

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KNOWLEDGE FOR THE PEOPLE.

ARTS AND MANUFACTURES.

Why are certain natural advantages in a country prejudicial to its progress in the arts?

Because, provided the mildness of the climate renders clothing and lodging of little importance, and the earth spontaneously pours forth an abundant supply of fruits, the inhabitants are immersed in sloth, and seem to place their highest enjoyment in being free from occupation. Sir William Temple, Mr. Hume, and some other sagacious inquirers into the progress of society, have been struck with this circumstance, and have justly remarked that those nations that have laboured under the greatest natural disadvantages, have made the most rapid advances in industy. A striking illustration of the above fact follows.

Why has the improvement of the natives of South America been so tardy?

Because of the extraordinary abundance of animal food, and the equal fertility of the country, where the finest fruits grow spontaneously, and only require to be gathered. Thus, the South Americans are neither a pastoral nor an agricultural people; and, surrounded by partial civilisation, they remain without any excitement to labour, which alone could improve their moral and physical condition.

Why has the coin of a kingdom been compared to the highways through it?

Because neither of them produce any thing; on the contrary, they are both to be kept in repair at a certain expense; but they greatly facilitate the conveyance from one place to another, of whatever the land produces by agriculture, or what active capital produces by manufactures and commerce. Such is the idea of Dr. Adam Smith, who also compares paper-money to a wagon-way through the air.

Why are we indebted to the ignorance and bad government of our ancestors for our present comparative facility of procuring subsistence?

Because, had it been otherwise, the population that would have accumulated in England since William the Conqueror, must have overflowed, like the swarming of the northern hives during the fall of the Roman empire. An entertaining writer says: "If all the Turks and Egyptains that are to die next year of the plague, were to be devoured during the present by crocodiles, a certain quantity of food would be gained, and things go on just as before. The Roman empire, and the world generally, would have been equally populous and prosperous, if the Huns and Ostrogoths had eaten each other, instead of strewing their bones and those of their antagonists through the wilds of Dacia and along the banks of the Danube."

Why has the pendulum been resorted to in regulating modern weights and measures?

Because it has enabled us practically to carry into effect the idea of seeking for a unit of measure in some unchangeable natural object; the great law of the pendulum being, that its oscillations are always performed in the same time.

Why are the foot, yard, &c. used as measures?

Because the earliest standards seem to have been for the most part derived from portions of the human body: as the cubit, or the length of the arm from the elbow to the tip of the middle finger; the foot; the *ulna*, arm, or yard; the span; the digit, or finger; the fathom, or space from the extremity of the one hand to the extremity of the other, when they are both extended in opposite directions; the pace, &c. These were not, however, *fixed* standards, as the size of the different parts of the human body differ in different individuals: hence it became necessary to select some durable article, a metallic rod, for example, of the length of an average foot, cubit, &c. and to make it the standard with which all the other feet, cubits, &c. used in mensuration, should correspond. These standards have been preserved with the greatest care; at Rome they were kept in the temple of Jupiter; and among the Jews, their custody was entrusted to the family of Aaron.

Why is money also called coin and cash?

Because coin (*cuna pecunia,*) from the French *coign*, i. e. *angulus*, a corner, whence it is supposed that the most ancient coin was square. *Cash* is from the French term *caisse*, that is, chest or coffin, for the keeping of money.

Why is there alloy in coins?

Because it may save the trouble and expense that would be incurred in refining the metals to their highest degree of purity; and because, when its quantity is small, it renders the coins harder, and less liable to be worn or rubbed.

Why is the guinea so called?

Because the gold with which it was first coined in the reign of Charles II. was brought from Guinea. For this reason also the guinea originally bore the impression of an elephant.

Why is the shilling so called?

Because of its corruption from the word *scylling*, the etymology of which would lead us to suppose it to have been a certain quantity of uncoined silver; for, whether we derived it from *sceylan*, to derive, or *scealc*, a scale, the idea presented to us by either word is the same—that is, as much silver cut off, as in China, and weighing so much.

Why is the penny so called?

Because of its derivation from the Latin *pecunia*, money.

Why was the banking system first introduced into England?

Because, in the turbulent times of the Commonwealth, the merchants and tradesmen, who had before trusted their cash to their servants and apprentices, found that no longer safe; neither durst they leave it in the Mint, by reason of the distress of majesty itself, although this was before a public deposit. In the year 1645, they first placed their cash in the hands of goldsmiths, who began to exercise both professions.

Why were the labours of the alchemists beneficial to mankind?

Because, however great their follies, their researches were instrumental in promoting the progress of chemical discovery. Hence, in particular, *metallic pharmacy* derived its origin. Mr. Herschel justly observes, "among alchemists were men of superior minds, who reasoned while they worked, and who, not content to grope always in the dark, and blunder on their object, sought carefully in the observed nature of their agents for guides in their pursuits."

TRADES AND PROFESSIONS.

THE SHIPWRIGHT.

The earliest notice we have of the construction of a building to float on water, is that which relates to Noah's Ark. This was the largest vessel that has ever been built; and the circumstance proves that the arts, at that early period, had been brought to considerable perfection: yet, as several centuries had elapsed, after the flood, before the descendants of Noah had much occasion for floating vessels, the art of constructing them seems to have been measurably lost.

Early records, which perhaps are worthy of credit, state that the Egyptians first traversed the River Nile upon rafts, then in the canoe; and that, to these succeeded the boat, built with joist, fastened together with wooden pins, and rendered water-tight by interposing the leaves of the papyrus. To this boat was, at length, added a mast of acanthus, and a sail of papyrus; but, being prejudiced against the sea, because it swallowed up their sacred river, which they were accustomed to worship as a god, they never attempted to construct vessels adapted to marine navigation.

The Phœnicians, a nation nearly as ancient as the Egyptian, being situated directly on the sea, without the advantages of a noble river, were compelled to provide means for sailing on a wider expanse of water. It is said, however, that they first traversed the Mediterranean, and even visited distant islands, with no better means of conveyance than a raft of timber. This is rendered somewhat probable, from the fact, that the Peruvians, even at the present time, venture upon the Pacific Ocean on their *balza*, a raft made from a spongy tree of that name.

The vessels first constructed by the Phœnicians, were used for commercial purposes: they were flat-bottomed, broad, and of a small draught; and the Carthaginians and Greeks likewise adopted this general shape. The ships of war, in early times, were generally mere row-boats, in which the combatants rushed upon each other, and decided the combat by valor and physical strength.

By successive improvements, the ships of antiquity were, at length, brought to combine good proportion with considerable beauty. The prows were sometimes ornamented with the sculptured figures of the heathen deities; and otherwise adorned with paint and gilding; while the sterns, which were usually in the form of a shield, were elaborately wrought in carved work. The approved length of a ship of war was six or eight times its breadth; and that for mercantile purposes, four times the breadth: hence, the distinction of *long ships* and *round ships*.

Both the long and round ships had a single mast, which could be taken down or elevated at pleasure. These vessels were, however, propelled with oars on occasions that required it; and the former, in their improved state, were properly galleys with one, two, or three banks of oars, which extended from one end of the vessel to the other. The rowers were all placed under the deck; and, in time of battle, the combatants contended above, being in part defended from the missiles of opposing foes by shields, and additionally by screens and towers covered with raw hides. The bow of each vessel was armed with a brazen or iron beak, with which the contending parties often stove in the sides of each other's vessels.

The general size of vessels in the best days of antiquity, was not greater than that of our sloops and schooners; but there are instances on record, which prove that they occasionally equalled in capacity the largest of modern times. In the early ages they were very small, and, for several centuries, were drawn upon the shore at the termination of every voyage. Stranding, however, became impracticable, after the increase in size, and the addition of the keel. The anchor and cable were therefore invented, to confine the ship at a suitable distance from the shore. At first, the anchor was nothing more than a large stone: afterwards, it was wood and stone combined: and finally, iron was the sole material.

The invasion of the Roman empire by the northern barbarians, caused the operations of war to be almost exclusively conducted on the land: this, together with the destruction of commerce during the general desolation of those ruthless incursions,

and the barbarism of the conquerors, occasioned a retrogression, and, in some parts of Europe, nearly the total destruction of the art of building ships.

The active trade which arose in the Mediterranean, during the middle ages, and the naval enterprises connected with the Crusades, occasioned a revival of the art of constructing ships; yet, it did not advance beyond the condition in which the Carthaginians had left it, until about the middle of the fourteenth century. At this era, the inconsiderable galleys of former times began to be superseded by larger vessels, in which, however, oars were not entirely disused.

The great change in the general construction of vessels, arose from the discovery of the polarity of the magnet, and the application of astronomy to nautical pursuits; for, by these means, the mariner was released from his dependence on a sight of the land, in guiding his vessel on its course. Larger ships were therefore constructed, capable of withstanding the power of more violent storms and loftier waves.

To the Italians, Catalans, and Portuguese, was ship-building most considerably indebted, in the early days of its revival. The Spaniards followed up their discovery of the New World with a rapid improvement both in the form and size of their ships; some of which even rated at two thousand tons burden. In more modern times, it is said, that the Spaniards and French are entitled to the credit of nearly all the improvements which have been made in the theory of the art; the English having never contributed essentially to advance it, although the greatest naval power of this or any other time.

In the United States, very great improvements have been made in the construction of vessels, since the commencement of the present century. Our builders, however, are less guided by scientific rules than by experience and a practised eye; yet, it is generally conceded that our ships of war and first-rate merchantmen are superior, in swiftness and beauty, to those of any other country.

In Europe, the first thing done towards building a vessel, is to exhibit it in three distinct views, by as many separate drawings; but, in the United States, the builder commences by framing a complete wooden model of the proposed construction; the thing itself in miniature. From this practice of our naval architects, have arisen the superior beauty and excellence of our vessels.

The timber generally used in the construction of American vessels, is live-oak, pine, chestnut, locust and cedar. The trees of mature growth are chosen, and girdled in the beginning of winter, at which time they contain but little sap: when sufficiently dry and hardened, the trees are felled; and, after the timber has been roughly hewn, it is carefully stored in some dry, airy, place, not much exposed to wind or sun.

In collecting ship-timber, the greatest difficulty is found in procuring the crooked sticks, which form the sides or ribs of the skeleton of a vessel. In countries where ship-timber has become an object of careful cultivation, this difficulty is anticipated by bending the young trees to the desired form, and confining them there, until they have permanently received the proper inclination. The timber is brought to market in its rough state, and sold by the foot.

The timber having been selected, the workmen proceeds to fashion the various parts of the proposed vessel, with appropriate tools, being guided in their operations by patterns, which have been made after the exact form of the various parts of the model. Much care is taken to avoid cutting the wood contrary to the grain, that its strength may not be impared.

After all the parts of the frame have been made ready, they are put together. The several blocks of timber on which the vessel is raised, are called the *stocks;* and to these pieces, the foundation, called the *keel*, is temporally fastened, in an inclined position. The keel is inserted into the *stern-post* at one end, and into the *stem* at the other. The *floor-timbers* are next fixed in the keel, every other one being there firmly bolted and riveted. Each of these timbers is a branch and part of the body of a tree; and, when composing a part of a vessel, they bear the same relation to it as the ribs to the human body; with equal propriety, the keel has been compared to the vertebral column, or backbone.

The next step is to apply and fasten the planks, which serve not only to exclude the water, but to bind all the parts firmly and harmoniously together. Simple as this part of the operation may seem to be, it is the most difficult, to be effected, and requires a preconcerted plan as much as any other part of the fabric. When it is necessary to bend a plank at the bow or stern, it is heated by steam, and then forced into place with screws and levers. The planks are fastend with iron or copper bolts.

The planking having been finished, and several particulars attendend to, which cannot be well understood from description, the vessel is ready for the work of the *caulker*, who carefully stops all the seams with oakum, and smears them with pitch. After the *scraper* has cleared away the superfluous pitch, water is pumped into the hold, to ascertain if there be any leak.

The bottom of the vessel is next sheathed, either with sheets of copper or pine boards, to protect it from the worms: the latter materials are employed when the planks have been fastened with iron; since the copper would cause the bolt-heads to corrode, if placed against them. In either case, sheets of paper, soaked in hot pitch, are interposed between the planks and the sheathing.

The vessel is now ready to be removed from the stocks to the water. This removal is called launching, which, in many cases, requires much skill in the preparation, and successive management. If there is no permanent inclined plane in the slip, on which the vessel may glide into the water, a temporary one is prepared, consisting of two platforms of solid timber, erected one on each side of the keel, at a distance of a few feet from it, and extending from the stem into the water. Upon this double platform, which is called the *ways*, is erected another set of timbers, and the space between these and the vessel is filled all along with wedges. The whole of this superstructure is called the *cradle*, and the extremities of it are fastened to the keel, at the bow and stern, with chanes and ropes.

Every thing having been thus prepared, the wedges are stimultaneously driven on both sides: by this means, the vessel is raised from the stocks, and made to rest entirely on the cradle. After the *shores* have been all removed, the cradle, with its weighty burden, begins to move; and, in a moment, the vessel is launched upon its destined element.

Among the ancients, a launch was ever an occasion of great festivity. The mariners were crowned with wreaths, and the ship was bedecked with streamers and garlands. Safely afloat, she was purified with a lighted torch, an egg, and brimstone; and solemnly consecrated to the god whose image she bore. In our less poetic times, there is no lack of feasting and merriment, although the ceremony of consecration is different; the oldest sailor on board merely breaking a bottle of wine or rum over the figure-head,—still, perchance, the image of father Neptune, or Apollo.

The vessel, now brought to the wharf, is to be equipped. The mode of doing this, is varied according as it may be a ship, brig, hermaphrodite brig, schooner, or sloop. The masts are first erected, and these are supplied with the necessary apparatus of spars, rigging, and sails. The latter are furnished by the sail-maker, who is sometimes denominated the *ship's tailor*.

MECHANICS' FAIR AT ALBANY.

The committee appointed to award premiums for articles exhibited by mechanics at the fair held at Albany, Sept. 1842, report, that they have examined the articles and recommend the following premiums, to wit:

A specimen of different kinds of Leather, manufactured by Jacob Hochstrasser, of Albany, consisting of harness, bridle, skirting upper and top leather; also patent enamelled leather of various kinds, of a superior quality, for which they award a diploma.

To G. Conklin & Co., for the best slaughter hemlock Soleleather, do.

Wm. Watson & Co., for the best Spanish do, do.

J. Ruyter of Greenbush, best oak-tanned do, do.

Thomas Guest, for wool and alum dressed Sheepskins, do.

George Sims of Troy, for the best Curaçoa Morocco, do.

Young & Server, for a beautiful specimen of ladies' gaiter Boots and Slippers; do.

James Goold & Co. for the best barouche, do.

Robinson & Vanderbelt, best Wagon, do.

J. D. W. Wemple, for the best Cutter, do.

Lyman J. Lloyd, for the best specimens of single Harness, do.

Do., for enamelled Saddles, manufactured for him by H. Bayard, do.

Fred'k A. Keeler, for the best Trunk, do.

Do do for the best Ladies' Saddle, do.

Each of the two above, exhibited beautiful specimens of Shaftoe Saddles, Bridles, Carpet Bags, &c. of a superior quality and workmanship.

O. Churchill, a show case containing specimens of Gun Mountings of his own manufacture, inlaid in various kinds of wood, tastefully arranged; also gun implements in great variety, do.

Edward Owens, a spine apparatus, calculated for correcting and straightening distorted or crooked spines, do.

Wm Brown & Co. for a variety of Plated Ware, different kinds, do.

O. B. Oakley, for a beautiful Plated Door Set, do.

J. Iggett, for a beautiful specimen of Urns, manufactured by himself from copper and tin, do.

Alfred Pierce, for Superior Coach Lace, do.

Ab'm Koonz, for a superior Rug, Coverlid and Carpeting, do.

J. Bryan & Son, for a beautiful specimen of Robes manufactured by them from Polar Bear, Civet Cat and Grizzley Bear Skins, do.

J. McManaus, for the best mole skin hat, do.

E. S. Herrick, for best Fur Hat, do.

E. S. Herrick, for Northwest natural Lynx Muff, do.

E. S. Herrick, for best Fur Cap, do.

Le Grand Smith, for an elegant Lady's Riding Cap and Boy's Cap, do.

The Committee also examined some beautiful specimens of Tapestry, exhibited by Mrs. P. M. Haynes, 29 Hudson st. consisting of Table Spreads, Ottomans, &c. do.

Gavitt & Co., for a beautiful specimen of Engraving, do.

Beriah Douglass, for the best Cooking and Parlor Stoves for wood and coal, do.

E. N. Pratt & Co., for self-regulating air-tight Parlor Stove, do.

Mellen Battel, for Domestic Steamer for culinary purposes, do.

H. H. Corning, for an elegant specimen of Book Binding, do.

C. Van Benthuysen, a specimen of Type Casting in full operation, do.

Thos. B. Ridder exhibited a beautiful specimen of his Tobacco and Segars, a superior article, for which the committe return him thanks, and recommend a diploma.

A. D. Rosekrans, for superior Writing Ink of different colors, do.

Jacob Henry, for Chimney Tops, an excellent article for smoky chimneys, and a small Furnace for burning Anthracite Coal, do.

Jesse Vail, for cast iron Mantel Grates of superior workmanship, do.

Phillips & Co., Troy, a machine for making Wool Cards, a very ingenious piece of mechanism, do.

Armstrong's machine for Scouring Knives, an excellent article for large taverns and boarding houses, do.

J. Gilligan, for Superior Paste Blacking, do.

Andrew Meneely of West Troy, for Surveyors Instruments, do.

Do. for the best large Church Bell, do.

Daniel Curtisss, best small do. do.

W. & R. Tucker, Curled Maple Chairs, do.

Goodsell & Parkhurst, Bureau Knobs, do.

John Woolensack, a case of superior Locks, do.

Wm. Richardson, best Silk Umbrella, do.

P. Conrad, for a specimen of Recut Files, do.

Matthew Gormley for a beautiful specimen of Copper Tea Kettles, do.

D. Benson, for an improved Punching Machine cutting saw-teeth, &c., do.

Benson, McCall & Co., for best specimen of Planes, do.

P. McKeever, for Cart Axletree and Horse Shoes, do.

Wm. N. Prince, of Richland, Otsego co., for best Screw Auger, do.

The Committee also examined a Fire Engine, manufactured by J. Rodgers of Albany, of superior power and workmanship, they examined it when in full operation, throwing 440 gallons per minute, and would recommend a diploma to the maker. Also one to the maker of the hose, L. J. Lloyd, and one to the manufacturer of the hose leather, Jacob Hochstrasser.

The committee would recommend to notice, a splendid church clock, manufactured by A. Meneely, West Troy, on an improved plan, with a dead beat escapement, thereby preventing the wind from having any effect upon the hands of the clock.

The whole being of very superior workmanship, and no doubt will keep the best of time, but if it had varied from its true course, Mr. Walsh had a sundial placed a few feet from it which never varies.

Among the many articles exhibited worthy of notice, the committee would recommend a model of window hinges and fastener, invented by Wm. Baker, of Utica; also a specimen of claw hammers, manufactured by Gorden Burley, of Troy; umbrellas manufactured by Weaver & Richardson, Albany; bellows, by J. Curtis; spool stands, a very pretty article, by H. V. Scattergood; a Centre Table, painted in imitation of different kinds of wood, by Robert Nixon; Charles Anderson also exhibited a beautiful specimen of his Confectionery; King & Barton, of Waterford, a machine called a Mill Brush; D. B. King, of Waterford, a Stock and set of Dies; an improved Morticing Machine, by Ichabod Cunningham; a beautiful assortment of Window Shades, by L. F. De Manney, New York; E. Hills and L. G. Smith, of Albany, a fine specimen of Hats and Caps; J. Walker, West Troy, Hats; John Gibson, Planes; Joseph Gibson, Planes; John Pearce, a beautiful lot of Walking Canes; James Burt, Bird Cages; George Peck & Co., Fairfield, Conn; Russian Oil of Bark, for renovating leather, a new discovery; Cornelius Brooks, two very elegant 12 keyed Flutes; James De Golyer, a specimen of Coach Varnish; Richard C. Morgan, a card of superior wrought Horse Nails; Joshua Monro exhibited a model of a chair for an invalid, called a Valetudinarian Chair; M. W. Mason, of Auburn, introduced a Locomotive Lamp, of a very brilliant appearance, calculated for Locomotive Engines; Leonard Procter, an improved Washing Machine; Joel W. Andrews, a Spirit Level, on an improved plan, also an Apple Pearing Machine; there were also various models of Stoves exhibited, such as Jenk's Parlor Stove; Stanly & Co.'s Rotary Cooking Stove, Troy; Anson Atwoods' Empire Stove, Troy; Mott's Cooking Stove, New York; John Curtis, Parlor Stove, Auburn. The committee not having an opportunity to see them all in operation, could not judge fairly of their merits, perhaps, but after much labor they came to the conclusion as above stated.

The committee also inspected several articles exhibited by merchants of Albany, which they pronounce of superior workmanship, and not inferior to any imported, to wit: Mr. George Warren exhibited Allen's self-cocking and revolving Pistol, a superior article. It contains six barrels in a solid piece of cast steel, having no communication with each other —revolves and discharges by merely pulling the trigger. The six charges may be fired at the pleasure of the holder in a fews seconds. With this a man is a host, a platoon, an army. The construction is simple, and action perfect. Made by Allen & Thurber, of New England Village, Mass. They also exhibited Ball's patent Gravitation Lock, David Ball, Sandy Hill, patentee, which supersedes the use of spring locks, which so often become useless. It commends itself to the observer from its simple construction, durability and ease of action, and is, we understand, used by many of the builders in Albany; also American Table Cutlery, manufactured by G. & D. N. Ropes, Portland, Me., made of cast steel, excellent patterns; also Coach Wrench, manufactured by H. W. Miller, Worcester, Mass., and American Latches, manufactured by Parker & White, Meriden, Conn. Messrs Pruyn, Wilson & Vosburgh exhibited a card of patent concave polished Screw Augers, manufactured by T. Dwight, jr. & Co., New Haven, Conn., a very superior article; also cast steel double ironed plane irons, manufactured by the same, at Phœnix Works; also Mr. Wm. McElroy exhibited a beautiful specimen of Woolen Yarn, manufactured in Columbia county.

The committee, although all practical mechanics, are aware of their incompetency of acting as judges of the merit of all articles exhibited, but they have acted with a view of doing justice to all, without prejudice to any.

Respectfully submitted.

JOHN IGGETT,
J. W. NETTERVILLE,
GEO. TRAVER,
} *Committee.*

WM. H. SMITTER, *Clerk.*

PATENT LAW.

The Baltimore American gives the following synopsis of the Bill passed at the late session of Congress, entitled "An Act to promote the progress of the useful arts":

"The first section authorizes the President of the U. S. to refund to any individual who shall have paid through mistake any sum for a patent. The 2d section extends the 3d section of the act of March, 1837, authorizing the renewal of pateats lost prior to the 15th Dec. 1836, to patents granted prior to the 15th Dec. 1836, though they may have been lost subsequently. The 3d section of the act provides for the reduction of the fee of $30, now required to be paid to the Commissioner of Patents, by persons making application for a patent, to half that sum. It also limits the duration of the patent to 7 years. The provisions contained in the last 3 sections, may be summed up in a few words, and are simply these: The oath required of an applicant, who is not for the time being a resident of the U. S. may be taken before any minister plenipotentiary, charge d'affairs, consul, or commercial agent holding commission under the government of the U. States, or before any notary public of the foreign country in which the applicant may be. Any person infringing a patent, is liable to a fine of not less than $100 and costs, one half to go to the U. S. and the other half to the prosecutor. All patentees and assignees of patents are required to engrave their names upon every patented article made by them and sold. Any one neglecting to comply with this provision, is liable to a fine of $100 and costs.

INVENTIONS, DISCOVERIES, ETC.

PHOTOGRAPHY.

We communicated a few days since for the *Union*, the following notice of an interesting discovery.

On the last day of the recent meeting of the British Association, some extraordinary facts in the department of optics were communicated by Professor Bessel, which are even more remarkable than those disclosed by *Daguerre*, in his wonderful discovery in photography. We cannot better communicate these facts ourselves, than by giving simply the experiment of Professor Bessel.

A black plate, either of horn or agate, placed below a polished surface of silver, at a distance of one-twentieth of an inch, and remaining there for ten minutes, the latter receives an impression of figures, &c engraved on the former, which may be rendered visible by exposing the silver plate to vapor, either of water or mercury, &c. The image made by the camera obscura may be projected on any surface whatever, (glass, silver, a smooth book cover, &c.,) without any previous preparation; and these will produce effects of the same kind as those observed on a silver plate covered with iodine, (as in the process of Daguerrotype.) Vapors of different substances are of equal effect, without pretending that the effect will always be permanent.

What is equally, if not still more remarkable, is that this wonderful, secret and silent operation, takes place at mid-night as well as at mid-day—in the dark as well as in the light. There, on the silver surface, the picture is to be called into sight by a breath! The image is evidently of the same character as that in photography, but produced without the aid of light, the material agent in that beautiful and extraordinary art.

We can hardly credit the particulars of this discovery, opposed as it appears to the philosophical principles involved in the phenomena of photography; but we have stated the facts in the case briefly and plainly. The art has not yet received a name; Sir J. Herschell, however, suggests *thermography*: he also stated that he had obtained impressions at the heating end of the spectrum, beyond the extreme red ray.

A METALLIC BALLOON,

To be worked by steam, has lately been invented by a mechanic at Neuremburg. It is calculated to carry fifty persons with fifteen day's provision; and, if the wind blows fair may pretty well compete with *Ariel's* "I'll put a girdle round the earth in forty minutes!"

THE PLOUGH.

In this implement the advance in thirty years has been truly astonishing. There is scarcely less difference between the neat cast iron plough of the present time and the clumsy wooden article used for the purpose at that period, than between that and the iron pointed crotched stick of the antients. In the ease of working and the effect produced on the soil, every man competent to judge will admit that the difference effected by improvemnat in the last thirty years is equal to fifty per cent.—*Cultivator.*

THE THRESHING MACHINE.

Experience shows that the farmer who gets out and sells his grain in autumn, admitting the prices are the same, realizes from his crop at least ten per cent more than he who does not dispose of his crops till the next spring. But it may be safely asserted that in grain growing districts, the whole force of the farm, if devoted to that object alone, would not be able to bring his grain into market in the fall if threshed by hand. Hence the threshing machine has come to his aid, and does the work so much better and quicker than it can be done by hand, that the getting out of a thousand bushels of wheat is counted a small affair.—*Ib.*

DISCOVERY IN SALTING MEAT.

The apparatus for this purpose consists of an air-tight vessel for containing the meat, connected with an air pump by which the air is withdrawn and a force pump to force in the brine, which saturates the meat in from twenty minutes to an hour. This process will no doubt be extensively applied at the west, and indeed wherever meat is salted to any extent. The principle has already been applied in tanning leather.

RIFLE MATCH.

I congratulate you and all American rifle shooters on the success of the United States in the great rifle match with Switzerland, which came off last July, between Frederick Jeannet and Pierre Henry Montandon, Esqs., on the part of Switzerland, and Capt. S. Lloyd, of New York, on the part of the U. States. The parties fired 30 shots each, aggregate measurement, off hand, distance 545 feet, or 181 yards 2 feet, the only distance recognized by the Swiss Government. Capt. Lloyd beat the best Swiss target 18 11-12 inches. Jeannet and Montandon fired in the town of Locle, Switzerland, and Capt. Lloyd at Hoboken, N. J. This is the first time that Switzerland has been beaten by any nation. Jeannet has been the champion of Switzerland for the last 15 years; he won the last government prize of 5000 francs. By the by, why don't our government encourage rifle gunnery, as they do in Switzerland? Why sir, I have almost a mind to mount the stump against Henry Clay, and make this my text—Rifle Gunnery.—*N. Y. Sun.*

MILITARY BRIDGES.

An officer of the Austrian army, has invented a system of throwing bridges over rivers in an almost incredible short time. It is said that a bridge two hundred and fifty feet in length, was completed in *thirty-five minutes*, and a batalion of infantry, a battery of artillery, and a regiment of cavalry passed over it in succession at accelerated paces.

This is an important invention in the science of war, and will greatly aid the march of troops, even in an enemy's territory, for the destruction of bridges will form no impediment to their progress.

GALVANIC EXPERIMENT.

Weinhold cut off a cat's head, and when its arterial pulsation had ceased, took out the spinal marrow and placed in its stead an amalgram of mercury, silver and zinc; immediately after this was done, the pulsation recommenced, and the body made a variety of movements. He took away the brain and spinal marrow of another cat, and filled up the skull and vertebral canal with the same metallic mixture.

Life appeared to be instantly restored—the animal lifted up its head, opened and shut its eyes, and, looking with a fixed stare, endeavored to walk—and whenever it fell, tried to raise itself upon its legs. It continued in this state 20 minutes, when it fell down and remained motionless. During all the time the animal was in this state, the circulation of the blood appeared to go on regularly; the secretion of the gastric juice was more than usual; and the animal heat was re-established.

From my Scrap Book.

AN AUTUMN SKETCH.

BY JOSEPH H. BUTLER.

"Pale faded year, thy dying hour has come.
Oh, there are crowds that with a joyous brow
Welcomed thy birth, whose mirthful voices now
Are hushed in the long silence of the tomb."

The last faint day streaks of the purple west
Hang like a mantle o'er yon chain of hills,
Wrapping their tops in glory. Silence reigns,
Save where the mellow sound from distant steer
Comes from the hollow vale, that stretches far
Its many windings, and the evening bird
Sings to the rising moon her plaintive song.
Here will I sit, and as my fancies rise,
On mountain wing, catch from the landscape round,
New inspiration for my humble lay.
Imagination would almost persuade
My sight it rested on a sea of flame.
O'er Heaven's immeasured sweep, from end to end,
Far as the sombre horizon extends,
The flood of glory rolls; island and hills
Baptized in molten gold, bask in its beams.
O, I could think Heaven's inmost courts revealed,
Did not the fetters of mortality
Admonish me of earth and earthly things.
Back, back, my rising soul! These chains must break,
And dust unite with dust ere thou art free!
The naked arms of yon dark pine trees rise,
Like armed giants, guardians of the gate,
Which leads to Persia's fabled Paradise.
Deep, and more deep, the crimson tinted eve
Glows while I gaze, till one unclouded blaze
Of living rose tint flushes nature o'er,
Staining the silver waters as with blood!
There too the season's king reins up his car,
And dips his horses' fetlocks in the deep.
His glowing race is done; unyoked, his steeds
Pant in their lofty mangers for the morn.
But, when the morning breaks, He shall come forth,
Shorn of his beams to us, for other climes
Demand their monarch, and the careful swain
In far off lands expects his fruitful ray.
Say, can it be idolatry in those
Of Persia's clime to deify thy beam?
Immortal fountain of ethereal fire!
Whose mystery none can know or ever shall
Till this mortality shall be put off,
And robes of immortality be ours.
Lights of expiring summer, fare thee well!
Go, on thy high and lofty pilgrimage.
How many tears
Thy parting leaves undry'd, the mother West
Weeps over the empty cradle of her love.
There bends the widow over her stricken lord,
The husband, too, looks on thy parting beam,
And vainly, fondly, feeds on vanished joys.
Could the dark tablet of each heart be read,
What sorrows would be traced, engraven there,
Now, shrined within the temple of the breast.
Perchance 't were better, since the heedless world
Cares too much for its self, and sorrow's tear
Is ever sacred—let it fall in peace!
Night mounts her ebon car, yon lake grows dim,
And sombre shadows gloom along the wave.
The skiff is moored, the sun-browned fisherman
Hath coiled his nets, and in his cottage home
The welcome taper gleams. In majesty
The Moon, disrobed of cloud, walks up her path,
Blending her silver rays with blue and gold.
The star of evening, riding stately on,
Gleams as a diamond in Night's braided hair;
While one by one her sparkling sisterhood
Peep through the cloudy bars, till other flames,
With myriad astral lamps. A temple this,
Where God is fitly worshipped—a fair shrine!
Did not the wise Chaldean choose it well?
What local habitation shall be given
To hold the Soul of all created things
That, boundless, dwells amid unnumbered worlds
Breathes in the blue immensity of space,
And nightly rides upon his star-lit car?
Or, on the black-winged tempest, dreadful He
Sweeps the vast verge of Heaven—his chariot wheels
Flashing fierce fires, while the deep thunders roll,
And guilty nations shake in wild dismay.
Go to thy roseate chamber, Summer, go!
I may not greet thee at thy next return:
Life's waning sun may then be set for me.
Perhaps then, thou returning with fresh flowers,
Wilt rise in glory on my silent grave!
Health, friends, and every trusting friend is gone,
And Desolation on a cloud, like night,
Hovers around my heart—yet on that cloud
Breaks forth the bow of promise, and young Hope
Whispers my soul (her form as Peri's bright)
"There is a land beyond Death's sable shore."
How swiftly speed Time's revolutions on,
To the dim realms of vast Eternity,
Where stands the past, and like a shadowy ghost,
Beckons the present. Time's uprising surge
Doth cover all things with an ocean wave.
Proud names are blotted from their sandy scroll,
The rich man in his pride exulting sees
His splendid domes arise. To-morrow's sun
Sets on his new-made grave, his narrow home.
Departing Summer! Once more fare thee well!
We will not part at variance; I have drank
(Whilst thou didst linger here) my joys of thee.
And when the robe of Autumn greets my sight,
Or withering Winter with his icy hand
Turns yonder streams to stone, I yet can read
A moral in each change, and see a type
Of MAN portrayed in each revolving scene.
But AUTUMN, thou art mine, my worshipped one;
My chosen! thou imperial, holy, bright—
Yea, let me say unearthly—hail to THEE!
Death! wrap thy banner round this bosom, then—
When nature seems expiring—*let me die*—
And my soul thus, in glory, pass away.

AMERICAN ANTIQUITIES.

Near the cove at the mouth of West river, in Vermont, are what are termed the Marked Rocks. They are so termed from being covered with curious and antique hieroglyphics.

It is stated that in an old burying ground discovered in White county, Tennessee, were found numerous skeletons, measuring from seven to nine feet in length, deposited in coffins of stone. These coffins are covered with various hieroglyphics and inscriptions, which the learned have not been able to translate.

In the same neighborhood are said to be found three other burying grounds, containing skeletons buried in the same manner, only nineteen inches long. One of them had ninety-four pearl beads around the neck. The graves are about two feet deep.

In the town of Stannurdsville, Virginia, have been found the impressions of human feet in the solid rock. The rock is argillaceous, and is found on the north branch of the Rivanna river, forming the embankment of the stream at that point, and that portion of it which contains the impressions projects into the stream, and is covered in high water. The impressions are those of a child's feet, and are seven in number. They have the positions relative to each other which they would naturally occupy in walking. The most skilful sculptor could not have cut any thing more true to nature than are these feet.

In Schoolcraft's travels there is a plate representing impressions of the two feet of a man, found on a compact, calcareous rock, near St. Louis, Missouri. Every appearance warrants the conclusion that these impressions were made at a time when the rock was soft enough to receive them by pressure, and that the marks of the feet are natural and genuine.

Several tracks of human feet are also said to exist between Esopus landing and Kingston on the Hudson river.

There is one impression on a detached block of granite, near the former residence of Com. Rodgers in Washington. The existence of a similar impression is spoken of in Orange county.

CANOES OF GUIANA.

The canoes which are manufactured by the Indians consist of the trunk of a huge tree, which has been hollowed out, partly by the axe, partly by the fire. They are sometimes from thirty to forty feet long; and are peculiarly qualified for these rivers, as they draw but little water, and are less subjected to leaking when drawn over cataracts or coming in contact with rocks, than if they were constructed of timbers. A covering of palm-leaves is substituted for an awning. As the largest of canoes is seldom more than four feet wide, its load must be restricted; and the baggage is generally placed in such a manner that, arrived where a cataract opposes obstacles to farther progress, it may be unloaded and carried over land.....

The canoe is flat on the bow and stern; and in order to prevent the water from getting into it, two pieces of wood cut according to its shape are fitted in, which the Indian never fails to ornament according to his fashion. The *corial* narrows to a point towards the stern and bow. Like the canoes, they are scooped out from the trunk of a tree, and have no keel,—which indeed would be quite a superfluous appendage, as it would be soon knocked off by coming in contact with sunken rocks, or when drawn over cataracts. The *pakasse*, or wood-skin, is a boat merely constructed of the bark of a tree. It is generally made of a single piece of the tough bark of the *murianara* tree, which grows to a very large size. An incision of the length the boat is to possess is roade in the bark, which is removed from the trunk by driving in wedges: when loosened from the wood, it is kept open by cross sticks, and is supported at the extremities upon two beams, in order to raise those parts of the intended boat. Vertical incisions, at about two feet apart and a few inches in depth, are then made, and the parts secured afterwards by overlapping. It remains for several days exposed to the weather before it is fit for use. Though the pakasse is so crank that the slightest motion, when once in, render it liable to upset, I have seen pakasses among the Tarumas, in the Cuyuwini, with five or six Indians in them. Their great advantage is, that being flat, they can float where a common corial of the smallest description cannot pass; and are so light, that in crossing cataracts, one man can easily carry his boat on his head. When propelled by one man, he squats in the middle and paddles on either side. Great care is requisite in stepping in or out of them, as if upset, they sink almost instantly, owing to the great specific gravity of the peculiar bark of which they are built.—*Schomburgh's Fishes of Guiana.*

EXLREME SMALLNESS OF CERTAIN OBJECTS.

It was exceedingly well remarked by a very great man, that a mite is, in every way, as wonderful a creation as an elephant. We are all apt to be more struck by the immense than by the minute. We look with a feeling of mingled awe and astonishment upon the mighty and the magnificent in nature. The mountains, whose tops are hidden among the clouds; the cataracts, whose roar of waters resembles the loud thunders of the sky; the huge whale rolling his vast bulk in clumsy sportiveness upon the waves; or the enormous form of the colossal elephant, seizes at once upon our attention and upon our admiration. We cannot, if we would, withhold our attention or restrain our wonder. We feel our own littleness the more strongly by contrasting it with the immensity of other creatures; and we readily entertain a sense of the sublimity and power of the Creator of such studendous wonders.

But though, in the more minute objects of the creation, there is no less of wonderful wisdom of design, and skilfulness of execution, we are more inclined to pass them by without notice. We look down with a contemptuous inattention upon them; and because they are less than ourselves, we consider them less wonderful. This course, common as it is, is not more common than it is incorrect. If there be any difference between the marvellousness of a mite and that of a mammoth, sound reasoning would adjudge the palm rather to the former than to the latter. If we may venture to illustrate the subject of the creation of God by speaking of the work of man's hands, it may be sufficient to observe, that it is in the smaller and finer works of art that the greatest skilfulness of the artificer is displayed. The larger, and, of course, rougher and ruder kinds of work, require considerably less finish and delicacy of execution than smaller ones. Defects and coarsenesess which, in the former, are imperceptible, are, in the latter, so conspicuous as to render the whole work imperfect and valueless.

ALBANY, SATURDAY, OCT. 8, 1842.

PATENTS.

The importance of giving notice of the object or names of the new inventions for which recent patents have been taken out, both in Europe and this country, we need not say, will be very acceptable to all interested in the arts. But, in doing this, it will be seen that we can give little more than the mere names and objects, since they are so numerous and generally require so much space for a sufficiently minute description to render them practically useful, that space would entirely fail. Nor, indeed, would all be alike important to our readers. Hence, we shall name the patents, and the objects which they were designed to accomplish, and, in certain cases, where we can secure particular descriptions of English patents, and they appear of special importance, we shall give them, as well also as those of American inventions. should any of our readers desire particulars, and will notify us, we will refer them to the source, if known to us, where they may be obtained. But all enquiries, as with all other communications addressed to us, *postage must be paid* if not forwarded by private conveyance.

SUBSTITUE FOR GLUE AND CAULKING.

The remarkable properties of a new cement have lately been tried by the master ship-wrights at Woolwich, England, by advice of the lords of admiralty. The experiments were highly interesting, and the results very important. Two pieces of African wood, called *teak*, very difficult to join by glue, on account of its oily nature, had a coating of the composition, in a boiling state, applied, and shortly afterwards bolts and screws were attached to the end of each piece, and the power of a Bramah's hydraulic engine applied, to the extent of nineteen tons, when *the chain broke, without the slightest perceptible strain where the joining had been made.* A still larger chain, of one and a half inches in diameter, was then applied, which broke with a strain of twenty-one tons, also without effect upon the cement!

Four pieces of hard wood were then joined together, weighing collectively over four thousand four hundred pounds, and carried to the top of the shears in the dock yard, seventy-six feet high, and precipitated upon the hard granite wall below, without the joints yielding in the slightest manner!

A number of oak plank, eight inches thick and sixteen inches square, were then united with the cement, together, eight feet in height and eight feet in length, of the size of a first rate ship of war, without any thing else in the form of a bolt, or security of any kind, and it was set up as a target at the butt, in the masses, in the presence of the officers of artillery, &c. Several shots were then made into the cemented planks, the effects of which were wonderful. *They tore the wood to pieces but had no effect upon the cement.* A hole six inches in diameter was then bored in the centre of the target and a three and a half pounder shell inserted and exploded by a slow match, which tore the wood into small splinters *without in the least separating the composition.*

A valuable property of this composition, in addition to its wonderful tenacity, is said to be its capability of expansion in warm climates, like India rubber, and yet it will not become brittle under the coldest temperature. It is not surprising that it has become a great favorite with naval officers, as it is so clean as to resemble very much the French polish.

The value of the composition on board of vessels at sea may be illustrated by another experiment tried with it. Eight pieces of wood, in the form of a mast, were joined together and a strain applied to another mast of an entire piece of wood, when *the latter first gave way!* Ship carpenters will, therefore, find no difficulty in effecting repairs at sea, with this extraordinary cement at hand. Nor is its value confined to the above or naval purposes, but it must become equally great for all purposes of the arts, where the joining of parts are necessary, as it is *insoluble in water.* Its cost is only *about half that of common glue.* The great saving, too, by its universal adoption, and the important uses to which it may be applied, are incalculable. A Mr. Jeffrey is the inventor, and the composition consists of *shellac and India rubber, dissolved in naptha,* in certain proportions.

MUTUAL INSTRUCTION SOCIETIES.

It appears that numerous societies have been formed and are now forming in various parts of England, under the above title, which sufficiently explains the objects in their formation. The question naturally arises, why such societies cannot be formed here. The members of these societies are composed mainly of the producing classes, at which are familiarly communicated practical information on the useful arts, in science, and general subjects of practical importance. We need only suggest the utility of such associations to our enlightened citizens, their effects must be apparent to all who will think of the subject. In towns and villages, throughout our country, they would prove of incalculable advantage to the people.

RECENT AMERICAN IMPROVEMENTS AND PATENTS.

Among these is one "*for weaving all kinds of figured goods,*" consisting, first, in lifting and lowering the threads of the warp with independent metallic heddles, instead of the weights, moles and twines composing the lower mountings or harness of the draw loom. Secondly, in constructing the cylinder, or pattern, so as directly to lift and receive the heddles, to form the sheed, or shive, or in constructing a trunk and pattern-web, both to direct what shall be the sheed, as in other machines, by trapping or untrapping the hooks or knot cords, to be drawn up.

A machine for manufacturing cannon balls, bullets and other balls, from malleable iron. The iron is first formed into round bars, of the size of the shot to be made, which is then brought to a heat nearly equal to that required in welding. When made of lead this heat is omitted. The machine consists of cutters, to cut off the required quantity of iron, and an apparatus for receiving the pieces cut, and for rolling them into a spherical form. The rollers are channeled pieces of cast iron or steel, the channels being semi-cylindrical cavities, &c.

A machine for splitting leather, or green hides.

An improvement in clocks; instead of the vibrations of a pendulum the clock is regulated by the twisting and untwisting of a narrow strip of steel, to the lower end of which a spherical weight is suspended. This is effected by an arrangement of the levers connected with the escapement wheel. A rotary hammer is also used in the striking part. The watch part is driven by a spring, which is wound up by the striking of the clock, &c

Door and other locks, denominated "the combined swivel wheel lock."

Improvement in fire engine, in which the ejection pipe, instead of being from five to eleven feet in length, is fourteen feet.

Improvement in making brushes, by attaching the bristles, &c., to whitewash and other brushes, required to be wide and thin, on each side of a chamfered bar and then confining them by a metallic band, made in two parts and joined at each end.

Improvement in fastening and confining the truss frame of bridges, keying the whole together like the toy called the "puzzle knot," and hence called the "puzzle keyed bridge."

Improvement in manufacturing butt hinges, by casting them in combined metallic moulds, and constructing the moulds of iron, one upon another, in tiers, and at each pouring casting a half hinge, &c.

Rotary steam engine.

Improvement in the construction of wheels for propelling boats, steam ships, and water and wind mills. The paddle boards pass through openings in the periphery of a hollow drum, and are joined to a crank within it, which remains stationary, but the drum revolves on its own axis, so that the paddles will be projected beyond the periphery of the drum during one part of their circuit and drawn in during the remainder.

Machine for culling clover seed.

An improved refrigerator.

Improvement in the harvesting machine, threshing all kinds of grain when standing in the field, without cutting the straw.

Apparatus for regulating the pressure of steam and other fluids confined in pipes, &c.

PURE WATER FOR NEW YORK.

Since the Croton water has been brought to the city, the anticipated impurities in the water have been more or less realized, and occasional suggestions have been made as to means of filtration. But it would seem that, as yet, no means have, or are very likely to be, adopted to accomplish so important an object. It is plain that some process must be used to allay the imaginings of the people on this subject, if not to effect really a great good.

Whilst on this subject, we notice that a highly valuable and illimitable process has been discovered in England, and submitted to the house of commons, which lord Brougham extols beyond measure, and which, if half equal to the favorable notices given of it, should be secured and applied at once to the Croton water. It surpasses all

modes of filtration hitherto known, both in the perfection and extent of its operations. Small filters, such as might be adopted for domestic purposes, from the slowness of the processes, *destroy the carbonic acid gas contained in the water*, without which it speedily becomes offensive, putrid and injurious to health. By this process, however, the carbonic acid gas is retained in the water. And, whereas, by the usual system of filtration, large quantities of ground are appropriated, which have frequently to be cleared, attended with malaria, often fatal in its results, in this process one foot answers as well as an acre of filtration beds, without the necessity of frequent cleaning, or danger from malaria. Nor is it less expeditious than perfect, as it performs in six hours what has hitherto required twenty-four hours; and it is as economical in space as in money, requiring but one foot to the acre, and performing the work for less than half the ordinary price. No patent has been taken out for this improved means of filtration, and the worthy petitioner only desires that means be instituted for the universal adoption of filtration upon his plan, for the benefit of hundreds of thousands of families, who ask for pure water. Our public authorities should see to this without delay.

RECENT ENGLISH PATENTS.

Royal sovereign balance; lamp chimney glass; spring for vehicles; stove; do.; easel for sketching, or perspective drawing apparatus; soda water tap; carpet; do.; do.; do.; do.; axle-arm; sketch on a hot lining; dressing case; endless chain ink distribution for printing machines; machine for letter press printing; apparatus for attaching coulters to ploughs; moulding plough; fender; slide rack pulley; coal scoop; horse rake; case for a conical pendulum clock; self-acting revolving horse rake; cotton stuff, scales; razor taug; horizontal chirsegemon, or piano forte hand guide rod; pencil case; fender; poncho cloak; grass cutting machine; piston for surgical syringes; peg knife; invisible flower trainer; smoke conductor; metallic comb; Scotch needle case; chimney sweeping machine; spring hook; lamp glass; hinge; lamp; ink reservoir pen; cloak.

Prior to these, and up to the 6th of July last, are many others, which we shall give in our next. An *improvement* in castors for cabinet furniture consists in a ball and docket, forming the castor, without anti-friction rollers of any kind, but with three points of contact, cast or otherwise raised within the socket, which rest on the ball and enable it to turn freely under any weight, and in case hardening said ball or socket.

Also, *improvements in the process or means of an apparatus for obtaining images or representations of nature or art*, consisting, first, in giving the front of the camera obscura, for Daguerreotype purposes, an aperture large enough to admit object-glasses of various foci, enabling the operator to work on large or small plates, to obtain objects near or distant; and in fixing the glasses to sliding boards, moveable in front of the camera, or withdrawn at pleasure. Secondly, in substituting for the detached mercury box a cup of mercury within the camera, heated by a spirit lamp till the mercurial vapors rise and fill the camera. The mercury and light thus acting simultaneously on the plate, intense and perfect images are obtained. A hole in the side, covered with red glass, enables the operator to watch the process and to withdraw the plates the instant the effect is produced. Thirdly, in placing immediately behind the sitter for a portrait, painted back ground, landscapes or apartments, which are transferred to the plate as well as the sitter. Fourthly, in the absence of daylight, of an artificial light from combustion of coal, promoted by a jet of oxygen gas, or combustible gases, etc.

PRECOCIOUS CHILDREN.

The following is in harmony with what we have often said in speaking of early education. "Prematurity of mind is no certain indication of future usefulness, nor is it to be desired in children. The life can no more be foretold from its beginning than the river can be known by looking upon its fountains; its rapidity and depth are afterwards determined by the region through which it flows, and the streams that join it. It is no more desirable to have the mind developed before its time, than to have the body reach its full growth in childhood. In both cases, premature growth is the forerunner of premature decay.

"It is a melancholy truth that nine-tenths of the blasted hopes which fond and foolish parents hang upon the early development of their children's minds are to be traced directly to this cause. The hot bed plant, too early forced to bloom, sheds but a pale and sickly flower upon the air, and straightway dies—to bloom no more on earth; while its more tardy sisters of the garden grow day by day more strong and beautiful."

ANSWER TO QUERIES.

In your last paper, under the head of queries, you wish to know how to make paper the best pink color, also yellow and emerald green; and, as I am a paper maker myself, I take the liberty of informing you the method I have taken and have never failed of getting a good color:

For Yellow—1 lb. of bi chromate of potassa, dissolved in hot water, put this in first, after it is well mixed put in 3 lbs. sugar of lead, set with alum.

For Pink—Take 1 barrel of ground peach wood, boil it 6 hours in 2 brls. water, after it is boiled strain it through flannel, take 4 gallons of the liquor, after well mixed set with muriate of tin; if the color is dead put in a small quantity of alum.

For Green—proceed as for yellow, add 1 pound Prussian blue, cut with mur. acid, set with alum.

This is the way I have generally proceeded, but the manufacturer must vary his colors to suit his stock; the whiter he gets his rags the better will be his colors, and he will therefore use less dye. The above receipts are for engines of 125 lbs. capacity.

Yours, truly, RAGS.

COATING METALS.

The process by which the surface of metals, such as silver, German silver, &c., are covered with gold by means of the electro-galvanic art, is now much practiced in France, and some articles made of these metals and thus coated with gold, are extremely beautiful. We were shown the other day a case of surgical instruments lately brought from Paris by a distinguished medical gentleman of New York, which were incomparably rich and splendid, and which, by the art alluded to, were not only thus beautiful, but effectually protected from oxydation by use.

Of this recent application of science to so useful and ornamental an art, we intend to speak more at length hereafter.

Design for a Fountain.—We have been shown a design for the Croton water fountain, in the park, by Mr. Henry Fiorelli, a distinguished sculptor in the city of New York, which, for beauty and classical richness in the composition, cannot fail, if adopted by the authorities, to strike every observer with admiration. At another time we may give a description of this elegant specimen of the art, with a pictorial illustration. The work is proposed by the artist at a very low price, and we hope, for the ornament of the city, it will be erected.

Notices of Books.—Publishers knowing the extent and influence of our circulation, need not be reminded of the advantages of sending in their publications for notice as early as possible, especially those of a practical or scientific character. We shall do justice to such works, deeming it a high duty we owe our readers.

Slave Trade.—The following home charge, from a late speech of lord Brougham, does not correspond exactly with the constant denunciations of the English press against Americans.

"The men who supplied nearly all the capital embarked in this traffic, the men whose ingenuity defeated every attempt to put it down, the men under whose auspices it is now flourishing to an unprecedented extent, were *British merchants*."

This statement was not denied in parliament.

Independent Ticket.—The *Independent Press*, a workingmen's paper published at Lewistown, Pa., hoists an independent ticket for the people, and we understand it to be an excellent one, as might be expected from honest, practical, and independent men. They will have such to represent them instead of those who legislate for party. Who will say that this is not right?

A PASSING REFLECTION ON THAT WONDROUS ORGAN, THE HUMAN EYE.

BY J. S., M. D.

Amongst the various instruments for different uses, which we behold in the physical constitution of man, there is none other, perhaps, which is so well calculated to arrest our attention, and to excite our wonder, as that one, so artificially beautiful in structure, so comprehensive in function, as the human eye. When we behold it in its appropriate sphere, in the human countenance, endowed with that vitality which life and health bestows, and which enables it to perform its function—when we contemplate it as the index of the heart and intellect, portraying their affections, emotions and perceptions, with a fidelity far surpassing the most accurately delicate touches of the pencil of the artist, required to give true expression to his picture! When we look upon its brilliant play in the development of benevolence, diffusing over the countenance an aspect of calm, bland composure, indicative alike of that purity and intellectuality of thought which we might suppose a Washington to

feel and manifest when in his godlike meditations he cast a thought back upon the effects of his deeds to millions yet unborn, in their enjoyment of that glorious liberty which, through his instrumentality, they will claim as their birthright. Or, as we might suppose the benevolently radiant countenance of the philanthropic Howard might assume when reflecting upon the mitigated anguish, the broken chains and the swelling emotions of gratitude which animated the bosom and suffused the eyes of the miserable prisoner, as the door of his dungeon opened and he beheld his deliverer before him, as he even looked, with outstretched arms, obedient to the call of humanity, and, in harmony with the tones of his voice, dropping in kindness a healing balm upon the *broken* spirit, seeming to awake it from a long sleep, and disposing his nature, almost incorrigible by repeated crimes, to listen with cheerfulness and hope to those kind entreaties calculated to win him back to virtue. Reversing the picture. When we behold the human eye, unaffected by such considerations, and withdrawn from such influences, it stands in its socket, assuming a cold, dull, leaden aspect, accompanied with that sinister contortion of muscle which envy and malice alone knows how to command—as if petrified at the use which the heart is making of it—revealing the expression of malevolence, as did that of the fratricide Cain, when he raised his hand to smite his brother Abel because of the more favorable acceptance of his offering. Or, turning from considerations presenting a picture thus repugnant, let us contemplate the more pleasing one as manifested by the eye in the affectionate tenderness of a mother bending over the form of her darling babe, when chanting its lullaby; or the anxious solicitude it expresses when she tends it in sickness; or the deep, unutterable sorrow which flows from it when the same mother looks upon the inanimate corpse of that darling. Reflecting, in fine, upon all the modifications of sunshine and cloud to which the human eye is auxiliary in spreading over the human countenance, where, I ask, among all the vital instruments of nature, animal or vegetable, adapted to our present intelligence, can we find another so comprehensive in function, so perfect in adjustment, and in all its powers and interests so worthy of our admiration?

QUERY—STEAM CONDENSERS.

Relying on you friendship for mechanics and the diffusing of useful knowledge among them, I take the liberty of enquiring of you or some of your worthy contributors, the *plan and action* of the steam condensers in common use on board the steam vessels on the North river and elsewhere; by enlightning me on the subject you will much oblige

A YOUNG MECHANIC.

SYNOPSIS OF NEWS, ETC.

A new and comparatively valuable growth of corn has recently been introduced into France from Algiers. The flour made of the corn is of a light yellow, making a savory white bread. Cattle, it is said, prefer the stalks, and it grows better in wet soils than the European corn.

The new fountain in Union place was tried for the first time a few evenings since. The main stream, as thick almost as a man's body, was thrown up about 30 feet in height, (the whole head of water not being on,) and the effect with the four additional jets, which were all in full operation, was beautiful. —*N. Y. American.*

Mr. Walsh has seen an official report of the accidents by vehicles in Paris for the first six months in the present year, twelve persons were killed and three hundred and eighty-one more or less injured. The report for 1841 gives seventeen deaths and four hundred and twelve cases of injury.

A mill for manufacturing sugar out of green corn stalks is in full operation at Wilmington, Delaware. The discovery is certainly an important one and if its inventor's anticipations are realized, will open a new field for the investment of capital, and add largely to the wealth of the country.

As a test of the skill of the mechanics of Petersburg, Va., it is said that of a large number of cannons (perhaps a hundred) recently cast in that city, every one stood the trial test.

A portion of the extensive iron works of Reeves, Whitaker & Co. in Bridgeton, N. J., was destroyed by fire on Tuesday of last week. The building consumed contained twenty-four nail cutting machines; a machine for manufacturing nail kegs; about 50,000 staves; and the whole of the extensive and valuable collection of patterns for casting, belonging to the establishment.

The rolling-mill of Messrs. Hughes and Evans, at Brownsville, which was lately destroyed by fire, has been rebuilt, and set to work again.—*Pit. Sus.*

There were 166 deaths in New York during the last week—36 men, 33 women, 58 boys, 40 girls; under 2 years of age 56. Consumption swept off 34, and cholera infantum 20.

In Philadelphia the last week, there were 105 deaths. By consumption, 12.

A young tinman, named J. A. Pesniman, fell from the roof of the Utica Bank, while at work—a distance of 40 feet. No bones were broken, but it is feared that he is internally injured.

It is with deep sorrow that we announce the death of Dr. Channing, of Boston. He died at Bennington, Vt. on Sunday afternoon. The death of this great and good man will be universally deplored, and his loss will be irreparable. His was indeed a great mind, united with a good heart. There was not in our whole country a man of purer heart or clearer intellect than Wm. E. Channing possessed. As a writer he was unsurpassed for beauty of style, strength and originality of thought, sound views and keen perceptions. His works are every where read, and by them he is generally known and admired on both sides of the Atlantic. They are all we have left of him now; but they are a rich, an invaluable legacy.—*Albany Citizen.*

A scientific Congress is to meet at Stratsburg on the 22d inst, 750 savans, from different parts of Europe had already announced their intention of attending the Congress.

The latest advices from Aleppo received in Beyrout, mentioned that the efforts made by the English expedition to open a communication by the Euphrates had failed, and that they would probably be obliged to abandon the undertaking.

The Swabian Mercury announces that the rail road works in the north and south of Austria have commenced, and not less than 30,000 men are to be employed on them the next spring.

The Journal des Pyreaces Orientals gives an affecting account of a flood which ravaged that country on the 24th August. Several manufactories were washed down, and the crops were in great part destroyed.

The number of convicts in the state prison at Sing Sing on Saturday morning last was 772 males, 73 females. Total 845. The prison is free from sickness, and the terms of sentence of 25 of the convicts expire during the present month.

The hands in Hargreave's mill, Bolton, England, turned out on the 10th Sept., and it is expected that the turn out will be general to-day, as the notices to quit will then expire.

All the mills continued at work at Staleybridge, till Thursday morning, when the turn out again became almost general. A shout is all that seems necessary from the idle, to induce an instant strike. At Ashton, &c., all is at a stand.

Sir John Tobin's ware-house, at Liverpool, had been destroyed by fire. Loss £15,000, exclusive of the building. Insured.

The mill of Messrs. Lockwood & Thornton, cotton spinners, a lofty building on the northeast of Blackfriers street, Salford, has been destroyed by fire.—The damage is estimated at £13,000. The machinery and stock are insured for £9,000.

The turn out at Manchester has given fresh signs of resuscitation. The hands in two mills in Salford were compelled to quit their work; and, in consequence, all the special constables were summoned on duty at 5 o'clock, to afford the necessary protection to such hands as were desirous to resume their work. The dyers have all gone in. Most of the weavers are still out.

Accounts from Silesia mention the destruction by fire, on the 20th August, of 114 houses, and 24 of the most important establishments in the town of Ciechanow, in the district of Prasnysz. The loss is estimated at about 600,000 francs, and upwards of 300 families are said to be totally ruined.

We have seen a "June Apple" which is a part of a third crop borne this year by a tree in the vicinity of Petersburg. We have also in our possession a Pear, which is a part of a second crop borne by a tree in the garden of a citizen of Petersburg.—*Petersburg Int.*

The extensive woollen factory, situated in Laurel, Franklin co., Indiana, owned by Messrs. Conwell & Van Bergen, and occupied by Mr. Elias Macy, was totally consumed by fire on the 19th ult. with its valuable contents. The entire loss is estimated at $16,000—no insurance.

On the 1st Sept., an awful conflagration broke out in the noble forests on the frontier of Saxony and Bohemia, which in a few hours resembled a sea of flame. More than two hundred acres of forest are already destroyed; in Bohemia the loss is immense. The fire still continued on the 4th. A thousand men were employed in endeavoring to stop its progress.

A fire originated on the 30th Sept., in an old distillery at Black Rock Dam, and from thence extended to the oil mill and Oakum works of Messrs. Smith & Howland, which, together with an iron foundry, two mechanic's shops, and a saw mill, owned by Mr. Gelston, were entirely destroyed. There were 500 hogs in the distillery at the time it took fire, and all but 45 were saved. Messrs. Smith & Howland lose about $2500, and had no insurance. The whole loss cannot be much short of $19,000.

We were invited yesterday to examine a machine recently put in operation in this city for printing or staining wall paper, at the paper hanging factory of Mr. William S. Birch, in South Howard street. This machine displays a great deal of ingenuity in its construction, and works with very great rapidity, printing in two or more colours about six pieces of paper per minute, and with greater regularity than can be done in the old method.—*Baltimore American.*

The Norfolk Beacon says in relation to a high pressure engine made of brass and cast steel by a Mr. Jordan of that city:

"The engine, boiler, furnace and fixtures, weigh but a pound and three quarters. Its stroke is three quarters of an inch, and the revolutions nearly six hundred to the minute. The steam was gotten up in eight or ten minutes, and it worked beautifully, the supply of water enabling it to run for half an hour."

SHERIFF'S OFFICE, City and County of Albany, Sept. 8th, 1842.—ELECTION NOTICE.—A general election is to be held in the county of Albany on the Tuesday succeeding the first Monday of November next, at which will be chosen the officers mentioned in the notices from the Secretary of State, of which the following are copies.

AMOS ADAMS, Sheriff.

STATE OF NEW YORK, Secretary's office, Albany, August 21, 1842.

To the Sheriff of the County of Albany:

Sir—Notice is hereby given that at the next general election to be held on the Tuesday succeeding the first Monday of November next, the following officers are to be elected, to wit:

A Governor and Lieutenant Governor of this State.

A Senator for the Third Senatorial District, to supply the vacancy which will accrue by the expiration of the term of Alonzo C. Paige, on the last day of December next.

Also, the following county officers, to wit: Three Members of Assembly.

Yours, respectfully,

S. YOUNG, Sec'ry of State.

STATE OF NEW YORK, Secretary's Office, Albany, Sept. 1, 1842.

To the Sheriff of the County of Albany:

Sir—Notice is hereby given that at the next general election to be held on the Tuesday succeeding the first Monday of November next, a Representative in the 28th Congress of the United States is to be elected for the Thirteenth Congressional District, consisting of the city and county of Albany.

Yours, respectfully,

S. YOUNG, Sec'ry of State.

BOOK BINDING.—HARVEY H. CORNING, sign of the golden ledger, 82 State street, Albany, carries on the above business in all its various branches, viz: PLAIN, EXTRA and SUPER EXTRA—has a first rate RULING MACHINE and other necessary implements for manufacturing BLANK BOOKS of every description, on the most reasonable terms, of the best materials and workmanship.

N. B. An assortment kept on hand. 27.

MISCELLANY.

LOVE AND LOYALTY.

The following duett is founded on the circumstances of a dandy having sent a love letter to a young girl, who, determined to ridicule his passion, seeks the exquisite, and finds him learning the manual exercise, having been inoculated with military ardor:

She—If I marry you, little man,
First I must mention;
I expect to receive from you every—
He— *Attention!*
She—For love as well as war,
Has its frequent alarms,
And jealousy will go with my hand—
He— *Shoulder arms!*
She—But should you, like the rest,
Prove a faithless lover,
My *Peace* I am afraid I should never—
He— *Recover!*
She—Sincerity is my plan,
And I hope no disgrace;
'T is written in my features, look—
He— *To the right face!*
She—In what month would you please,
To marry me, sir—
He— *March!*
She—But, sir, I am very poor,
With candor to deal;
In marriage lotteries, men go—
He— *To the right wheel!*
She—All my faults, then, dear sir,
To you I 'll confess,
In fashionable clothing I like to—
He— *Halt—front—dress!*
She—I 'm extravagant, too,
With expenses I 'll
He— *Load!*
She—You—and consequently—
He— *Handle cartridge!*
She—I forbode
That the cost of apparel
Will not be—
He— *Prime!*
She—If quarrels must issue,
Of words we 'll have a—
He— *Bout!*
She—Will you listen to me, now,
And don't put me out;
From one spark to another,
If you 'll only keep steady,
These verses to the fire I 'll give, and—
He— *Make ready!*
She—Not to light the torch of Cupid
These lines I 'll—
He— *Present!*
She—A flame in the kitchen
To kindle, I meant;
To give them what they need,
And put them in the—
He— *Fire!*

ODDITIES OF ORTHOGRAPHY.

It is a known fact that vessels at sea often run on a *rock* without running on a rock; it is as often the case that people go to sea to see.

It takes a man to make a bow, but it takes Nature to make a bough; then it takes a tailor to make a beau, and a milliner to make a bow.

A man on horseback in the night,
Must down alight to light a light.

A fox-hunter likes to go over a stile in style, and he must never rail at a rail or suffer a bar to bar him.

A true sportsman will never quail at shooting a quail; nor a milk maid turn pale at lifting a pail over a pale.

Forced marriages often wring a girl's heart while they ring her finger; and with all this ringing she is not a bell, though still a belle.

Te-totallers bound for water are of course "water bound;" though we are not aware that temperance has ever tied the tide.

Play fair and pay fare; and when you go to pray don't go to prey.

Steel your heart against temptation, and don't steal.

An agitating peal from the romantic retreats of far-famed Erin is rolling to the western shore of the great Atlantic, and the peal tells of a repeal in spite of Sir Robert Peel. Peel is a "peeler," but O'Connell's a *re*-pealer.

When you hunt a hare, the hare will often make a hair-breadth escape.

You may often have met a hale old fellow "hail fellow well met" with his fellows.

They in New York may go to sleigh,
Sometimes, while we must quitos slay.
A male may fail and find a bail,
But all bails fail when fails the mail.

N. O. Picayune.

INDIGO.

A beautiful blue color or die procured from a plant growing in America, called the anil; in the Linnæan system, Indigo-fera. The indigo used by the diers is a fæcula procured from the leaves of the plant, which are laid in vats full of water, and left to ferment. The liquor is then drawn off into another vat, and after having been well stirred up, it is drawn off, and what remains at the bottom is exposed to the air until it is thoroughly dry, when it is fit for use. The principal constituent parts of indigo are mucilaginous, resinous, and earthy matter, with some oxide of iron.

MERIT.

Those illustrious men who, like torches, have consumed themselves, in order to enlighten others, have often lived unrewarded and died unlamented. But the tongues of after times have done them justice in one sense, yet injustice in another. They have honored them with their praise, but they have degraded them with their pity. They pity them forsooth, because they missed of present praise and temporal emolument: things great indeed to the little, but little to the great. Shall we pity a hero, because, on the day of victory, he had sacrificed a meal? And those mighty minds whom these pigmies presume to commiserate, but whom they cannot comprehend, were contending for a far nobler prize than any which those who pity them can either give or withhold. Wisdom was *their* object, and *that* object they attained; she was their "*exceeding great reward.*" Let us therefore honor such men, if we can, and emulate them; if we dare; but let us bestow our pity, not on them, but on ourselves, who have neither the merit to deserve renown, nor the magnanimity to despise it.—*Lacon.*

Why are everybody's pantaloons too short? Because their legs stick through them as much as two *feet*.

Going ahead.—Mr. John *Going*, to Mrs. *A. Head.*

All Right.—Mr. Levi *All*, to Miss Jane *Wright.*

Short and Sweet.—Mr. James *Short*, to Miss Emeline *Sweat.*

USEFUL MAXIMS.

If it be by indiscreet levity that any one has spoken against us, we ought not to regard it; if it is by folly, we ought to pity him; if it be by ill-will, we are very ready to pardon him.—*Theodosius.*

There is a pleasure in weeping over afflictions for which none have ever wept before.—*Chateaubriand.*

The sum of behavior is, to retain a man's own dignity without intruding upon the liberty of others.—*Livy.*

To all the arts and sciences nothing can be more hostile than the romantic or barbaresque taste; for this distorts nature itself, which is the universal prototype of the noble and the beautiful: and hence it is that the Spanish nation has shown little feeling for the fine arts or the sciences.—*Kant.*

Persevere in a pious observance of all the laws, and be not diverted from your duty by any idle reflections the silly world may make upon you; for their censurers are not in your power, and consequently should not be any part of your concern.—*Epictetus.*

It is a virtue to avoid vice, and the first step to wisdom is to be free from folly.—*Horace.*

Those who outlive their incomes by splendor in dress and equipage, resemble a town on fire, which shines by that which destroys it.

She who makes her husband and her children happy; who reclaims the one from vice and trains up the other to virtue, is a much greater character than ladies described in romances, whose only occupation is to murder mankind, with shafts from the quiver of their eyes.—*Goldsmith.*

Our admiration, which is a very pleasing motion of the mind, immediately rises at the consideration of any object that takes up a great deal of room in the fancy.—*Addison.*

It was equity that established weights and measures, and discovered the use of numbers.—*Phœnician Virgins.*

To detract any thing from another, and for one man to multiply his own conveniences by the inconveniences of another, is more against nature than death, than poverty, than pain, and the rest of external accidents.—*Cicero.*

The only riches is a clear, an uncorrupted, an honorable independence.—*Anon.*

Beware of sudden change in any great point of diet; and if necessity enforce it, fit the rest to it; for it is a secret both in nature and state, that it is safer to change many things than one.—*Bacon.*

Bashfulness is more frequently connected with good sense, than we find assurance; and impudence, on the other hand, is often the mere effect of downright stupidity.—*Shenstone.*

Preserve well the fire of your charity and the fervor of your devotion.—*Anon.*

When I consider the boundless activity of our minds, the remembrance we have of things past, our foresight of what is to come; when I reflect on the noble discoveries and vast improvements by which these minds have advanced arts and sciences; I am entirely persuaded, and out of all doubt, that a nature which has in itself a fund of so many excellent things, cannot possibly be mortal.—*Xenophon.*

Many new years, indeed, you may see, but happy ones you cannot see without deserving them. These, virtue, honor, and knowledge *alone* can merit, *alone* can produce.—*Lord Chesterfield.*

PATENT AGENCY.

THE UNDERSIGNED, for the last three years Examiner in the Patent Office of the United States, has established an agency at Washington City, to accommodate persons desirous of obtaining patents for improvements in the useful arts.

As it is important to Patentees that their business should be attended to with promptness and fidelity—their interests frequently suffering from the delays growing out of the return of their papers for amendment, when drawn up by themselves or persons not acquainted with the business—it is evident that a great advantage will be derived from the employment of a proper person in the first instance.

An experience of three years in the Patent Office, during which period hundreds of inventions have been examined by the undersigned, has fully qualified him, he thinks, to serve as a Patent Agent, with the greatest possible advantage to those who may favor him with their patronage, as from his acquaintance with the forms of the office and inventions already patented, he will be enabled, in drawing up the papers of applicants, to avoid whatever might delay or prevent the issuing of a patent. His experience will enable him also to furnish information to persons respecting the novelty of their inventions, before they are submitted to the office, so that they may avoid the expense attending unfavorable applications for patents.

In every thing relating to his profession, embracing the application of chimistry to the arts, improvements in surgical instruments, &c., the undersigned will be able to render important assistance to inventors.

Having established agencies at London and Manchester, in England, he will be able to secure patents in that country, and prepare all the necessary papers with the greatest promptness and dispatch.

Inventors need in no case subject themselves to the expense of visiting Washington, as by forwarding to the Patent Office a model, where the invention is a machine—or a specimen, where it is a composition of matter—and sending a short description explanatory of its nature, &c. to the undersigned, all the necessary papers and drawings can be prepared and sent to the applicants for their signatures.

Models and papers can be forwarded to the Patent Office free of expense, by being delivered to the Collectors of the different ports. In the city of New York, the undersigned has an agent—M. Levy, 68 Maiden Lane—who will immediately forward by railroad all models and papers placed in his care for this purpose.

An Architect and Engineer, employed for the last four years as a Draftsman in the Patent Office, will attend to the execution of all the necessary drawings required by the undersigned in his business. Those who may prefer to draw up their own specifications, can have their drawings executed by him with the greatest accuracy and on the most reasonable terms.

Communications *postpaid*, addressed to the undersigned, will be immediately attended to. In all cases where information is required, a fee of five dollars must be enclosed.

T. W. DONOVAN.

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